

**WHAT IS CLAIMED IS:**

1. For use with a power converter having a main active clamp  
2 circuit associated with a main power switch coupled to a primary  
3 winding of a transformer and a rectifier switch coupled to a  
4 secondary winding of said transformer, said main power switch  
5 configured to conduct during a main conduction period of said power  
6 converter and said rectifier switch configured to conduct during an  
7 auxiliary conduction period of said power converter, a gate driver,  
8 comprising:

9 a DC offset bias circuit, coupled to a secondary winding of  
10 said transformer, configured to provide a gate drive signal having  
11 a DC bias voltage to a gate terminal of said rectifier switch.

2. The gate driver as recited in Claim 1 further comprising  
2 a resistor, coupled in series with said gate terminal of said  
3 rectifier switch, configured to extend a transition time of said  
4 rectifier switch from a conducting state during said auxiliary  
5 conduction period to a non-conducting state.

3. The gate driver as recited in Claim 1 wherein said DC  
2 offset bias circuit comprises a battery.

4. The gate driver as recited in Claim 1 wherein said DC  
2 offset bias circuit comprises a zener diode.

5. The gate driver as recited in Claim 4 wherein said DC  
2 offset bias circuit further comprises a capacitor coupled in  
3 parallel to said zener diode.

6. The gate driver as recited in Claim 4 wherein said DC  
2 offset bias circuit further comprises a resistor coupled to said  
3 zener diode.

7. The gate driver as recited in Claim 1 wherein said  
2 rectifier switch is a synchronous rectifier switch.

8. For use with a power converter having a main active clamp  
2 circuit associated with a main power switch coupled to a primary  
3 winding of a transformer and a rectifier switch coupled to a  
4 secondary winding of said transformer, said main power switch  
5 conducts during a main conduction period of said power converter  
6 and said rectifier switch conducts during an auxiliary conduction  
7 period of said power converter, a method of driving said rectifier  
8 switch, comprising:  
9 coupling a DC offset bias circuit to a secondary winding of  
10 said transformer and a gate terminal of said rectifier switch; and  
11 providing a gate drive signal having a DC bias voltage via  
12 said DC offset bias circuit to a gate terminal of said rectifier  
13 switch.

9. The method as recited in Claim 8 further comprising  
2 extending a transition time of said rectifier switch from a  
3 conducting state during said auxiliary conduction period to a non-  
4 conducting state.

10. The method as recited in Claim 8 wherein said DC offset  
2 bias circuit comprises a battery to provide said DC bias voltage.

11. The method as recited in Claim 8 wherein said DC offset  
2 bias circuit comprises a zener diode.

12. The method as recited in Claim 11 wherein said DC offset  
2 bias circuit further comprises a capacitor coupled in parallel to  
3 said zener diode, said zener diode and capacitor cooperating to  
4 provide said DC bias voltage.

13. The method as recited in Claim 11 further comprising  
2 providing a bias current to said zener diode.

14. A power converter, comprising:

2 a main power switch coupled to an input of said power  
3 converter that conducts during a main conduction period of said  
4 power converter;

5 a main active clamp circuit associated with said main power  
6 switch;

7 a transformer having a primary winding coupled to said main  
8 power switch;

9 a rectifier coupled to a secondary winding of said transformer  
10 and including a rectifier switch that conducts during an auxiliary  
11 conduction period of said power converter; and

12 a gate driver, including:

13 a DC offset bias circuit, coupled to a secondary winding  
14 of said transformer, that provides a gate drive signal having  
15 a DC bias voltage to a gate terminal of said rectifier switch.

15. The power converter as recited in Claim 14 wherein said  
2 gate driver further comprises a resistor, coupled in series with  
3 said gate terminal of said rectifier switch, that extends a  
4 transition time of said rectifier switch from a conducting state  
5 during said auxiliary conduction period to a non-conducting state.

16. The power converter as recited in Claim 14 wherein said  
2 DC offset bias circuit comprises a battery.

17. The power converter as recited in Claim 14 wherein said  
2 DC offset bias circuit comprises a zener diode coupled in parallel  
3 to a capacitor, said DC offset bias circuit further comprising a  
4 resistor coupled to said zener diode.

18. The power converter as recited in Claim 14 wherein said  
2 rectifier switch is a synchronous rectifier switch.

19. The power converter as recited in Claim 14 further  
2 comprising an auxiliary active clamp circuit associated with said  
3 rectifier switch.

20. The power converter as recited in Claim 19 wherein said  
2 auxiliary active clamp circuit, comprises:  
3 an auxiliary clamp capacitor, coupled across said rectifier  
4 switch, that stores a clamping voltage substantially equal to an  
5 off-state voltage of said rectifier switch; and  
6 an auxiliary clamp switch, coupled in series with said  
7 auxiliary clamp capacitor, that receives a drive signal from a  
8 secondary winding of said transformer and conducts during said main  
9 conduction period thereby clamping a voltage across said rectifier  
10 switch at about said clamping voltage.